

is academic; therefore, disciplined. There is no specific purpose to impugn the judgment of the Warren Commission, or to undermine the United States government, or to encourage any extremist views of conspiracy.

This is a critique by panelists, all of whom are well qualified in the areas explored in their discussions. In those instances where the participants treat their subject harshly, these should be recognized as natural consequences of learned, objective studies, totally consistent with the aims of the Academy to advance the application of forensic sciences. In fact, the nature of this symposium is not appreciably different than some presented in former years where real case situations provided the basis for panel discussions and mock trials.

Some of the questions to be considered are: Was everything done that could have been done? Was anything done that should not have been done? Were the "expert" witnesses truly expert? Should additional independent witnesses have been consulted?

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THE WARREN COMMISSION: Report and Hearings*

A Commentary on Issues of Importance in the Study
of Investigation and Criminalistics

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The literature of criminal investigation is sparse indeed. For this reason alone the Warren Commission Report is a document of landmark proportions. However, the inherent importance of the inquiry and the not inconsiderable sum spent by the government to consummate the investigation are other aspects that contribute to its significance. Since the report is based on a procedure which is neither pure criminal investigation, a trial, or other regular judicial process, it affords an opportunity to examine the nature of the investigative function and to inquire whether the means chosen were the best of the possible alternatives. In the sub-specialties of forensic science: pathology, criminalistics, questioned documents, and psychiatry, the printed testimony reveals the state of expertise that was available at the time for this—the most demanding homicide investigation ever undertaken. A close reading of the testimony of some of the experts utilized, at least in criminalistics, suggests that there are some areas in which the basic research necessary for the objective evaluation of evidence has yet to be performed. In short, the Warren Commission Report is a document of primary importance to those who are seriously engaged in the study of the investigative process.

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The Commission was created by President Lyndon B. Johnson on November 29, 1963 by Executive Order No. 11130. This measure to investigate the assassination of President John F. Kennedy on November 22, 1963 was undertaken because

Throughout the world, reports on these events were disseminated in massive detail. Theories and speculations mounted regarding the assassination. In many instances, the intense public demand for facts was met by partial and frequently conflicting reports from Dallas and elsewhere. After Oswald's arrest and his denial of guilt, public attention focused both on the extent of the evidence against him and the possibility of a conspiracy, domestic or foreign. His subsequent death heightened public interest and stimulated additional suspicions and rumors (1).

Thus speculation, suspicion, rumor, and conflicting reports—official and unofficial—were elements of the festering doubt among peoples everywhere in the world. How best to resolve this doubt was a question that required an immediate answer.

Several procedures—including a court of inquiry before a Texas state magistrate, a grand jury investigation in Dallas County, Texas, and hearings before Congressional committees of both houses—were under consideration at one time or another (2). The prospects for a definitive answer from any or all such methods of inquiry were slim indeed. The President's appointment of the Warren Commission was a deliberate alternative that

sought to avoid parallel investigations and to concentrate fact finding in a body having the broadest national mandate (3).

The Commission was given two important investigative weapons, viz., the power

to issue subpoenas requiring the testimony of witnesses and the production of evidence relating to any matter under its investigation. In addition, . . . (it could) . . . compel testimony from witnesses claiming the privilege against self-incrimination under the fifth amendment to the U. S. Constitution by providing for the grant of immunity to persons testifying under such compulsion (4).

In addition,

All Federal Agencies . . . (were) . . . directed to furnish services and cooperation to the Special Commission. The Commission . . . (was) . . . also empowered to conduct any further investigation that it deemed desirable (5).

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It would seem that the authority and resources of the Commission were commensurate with its responsibility

to study and report upon all facts and circumstances relating to the assassination of the late President, John F. Kennedy, and the subsequent violent death of the man charged with the assassination (6).

How the Commission proceeded in order to accomplish its objective and how well it succeeded are two questions of great interest to anyone concerned with the investigative process. The Commission in its report discusses the procedural question:

The Commission has functioned neither as a court presiding over an adversary proceeding nor as a prosecutor determined to prove a case, but as a fact finding agency committed to the ascertainment of the truth. In the course of the investigation of the facts and rumors surrounding these matters, it was necessary to explore hearsay and other sources of information not admissible in a court proceeding obtained from persons who saw or heard and others in a position to observe what occurred (7).

The question of how well it succeeded is more difficult to appraise. The data disclosed through a special survey made by Louis Harris of a cross-section of the American public shortly after the release of the report is possibly suggestive of its success. The question and response (in part) were as follows:

The survey, completed after the issuance of the commission report, followed an earlier one taken just prior to release of the report. People were asked: From what you have read or heard, do you feel the full story is in the Warren Commission Report? Or do you think there are still a lot of unanswered questions about who killed President John Kennedy and how it was done? (8).

	Percent
Full story in report	45
Still unanswered questions	45
Not sure	10

Any investigation which fails to satisfy 55 percent of those for whom it was made can hardly be designated an outstanding success. It would be interesting to repeat the poll to learn what change, if any, has occurred with time.

Several carping essayists have left a legacy of critical commentary on the fact-finding and explanations offered by the various official governmental agencies, including the Warren Com-

mission (9, 10, 11). Contributing to this skepticism is the fact that the Commission, despite the high quality of its members, was nevertheless a case of the government investigating itself. To what extent such incredulity would have been mollified had greater use been made of nongovernmental investigators is difficult to assess. Certainly a cogent argument can be made that an independent review by autonomous investigators, and research scholars would have made for greater confidence in the Commission report. Unfortunately the suggestion that such people might be used in the following manner:

To assist in the review of the case as to the comprehensiveness of the investigation. Were any investigative leads not pursued to the ultimate? Were any overlooked? An objective, independent audit of the investigative procedures by people competent in the field of investigative administration is a major consideration for your commission (12).

was rejected by the General Counsel for the Commission with the statement that

... we are hopeful that the review of the underlying investigative materials by experienced members of our staff will be adequate to ensure that the investigation is thorough and accurate (13).

The demands of good scholarship should have been no different in this inquiry than they will be when the matter passes from contemporary interest to the concern of historiographers. Unfortunately little use was made of such scholarly resources and the work of the Commission is the weaker for it. Perhaps, to paraphrase Clemenceau, investigation was too important to leave to lawyers!

An example of scholarly concern with the investigative process is seen in the paper by Professor William P. Brown (14). He has suggested that the President's assassination must be regarded as one of a class of "crimes of national significance" and that in these cases our decentralized policing leaves an obvious gap in the resources and competence necessary to deal effectively with them. Following a discussion of how it would be possible to improve greatly future performance in such cases through institutionalized investigative responsibility, he further suggests that the prevention of any similar travesty of justice would be

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an appropriate tribute to that great American whose death has brought to our attention this flaw in the administration of American criminal justice (15).

The assassination of high federal officials has since been taken care of. Under legislation passed in 1965, this would presumably be a simple federal offense (like treason) investigated and prosecuted in a routine way by regular federal agencies.

The problem remains however of dealing effectively with other crimes of national significance such as the assassination of foreign dignitaries on our soil.

GENERAL COMMENTARY

An abundance of physical evidence was available to the investigators of the assassination of President Kennedy. For example, the following types of clue material were found: Impressions—fingerprints and palm prints; hairs and fibers; ballistics—bullets, cartridges, a rifle, a bullet hole in glass, and powder residue; documents—handwriting, paper, and gummed tape; miscellaneous—a photographic negative, whose source had to be determined. The profusion of physical evidence, recognized and collected in the Kennedy case, is at least in part attributable to the resources which were poured into the investigation.

It is interesting to speculate whether a similar amount of physical evidence is often available in other homicides. Moreover, if such evidence is present, is it overlooked in many cases owing to lack of training or education, or is it disregarded owing to the lack of convenient criminalistic resources? It is my belief that there is considerable physical evidence present at many crimes, not just homicides, that is not profitably utilized for some combination of the reasons mentioned above. In any event a major use of physical evidence is to establish a connection between the crime scene and the criminal. This might be termed the development of *associative evidence* (16). This represents the greatest use made of the physical evidence in the Kennedy homicide.

INTERPRETATION AND RESEARCH

A close reader of the Warren Commission Hearings and Report will recognize through comparison of some of the testimony

an admission of a softly-mentioned problem in criminalistics, viz. the philosophical basis of interpretation of laboratory data obtained through the examination of physical evidence. The testimony also unwittingly underscores the genuine need for long-overdue, fundamental research which is necessary in order to establish objective criteria for the evaluation of physical evidence.

Dichotomy in Interpretation

In its simplest terms the dichotomy in evidence interpretation may be stated as the black and white versus the black, gray, and white views. Almost all fingerprint experts are now in complete agreement with the former concept, as are some firearms experts (17). Rarely however are any of these individuals trained as scientists, so that the "it is" or "it is not" philosophy is readily accepted as satisfactory. Furthermore, as testimony, this view meets the requirements sometimes demanded by the legal mind; it does not produce the conflict which results when the "gray" area of doubt intrudes. This disagreement is reflected in the hearings. First let us consider the statement of the black-white view (18).

Q. . . . do you feel that the amount of markings here were sufficient to make positive identification?

A. Yes, sir.

Q. Have you made identification in the past with as few or less markings as are present on this bullet fragment?

A. Oh, yes; and on less, much less of an area. The character of the marks is more important than the number of the marks.

Q. . . . here you were of course unable to see all of the lines which were present on the bullet before mutilation. Have you ever had an occasion where you examined a bullet and saw one portion of it which was an apparent match and then found out that the balance of the bullet was not an apparent match?

A. No, sir; and if I understand your words "apparent match," there is no such thing as an apparent match. It either is an identification or it isn't, and until you made up your mind, you don't have an apparent match. We don't actually use that term . . . Unless you have sufficient marks for an identification, you cannot say one way or the other as to whether or not two bullets were fired from a particular barrel.

In other words, you cannot nonidentify on the absence of similarities any more than you can identify when you have no similarities present.

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Q. In other words, you won't make an identification unless you feel enough marks are present to constitute a basis for a positive identification?

A. That is right, and I would not report any type of similarities unless they were sufficient for an identification, because unless you can say one bullet was fired from the same barrel as a second bullet, then there is room for error, and in this field of firearms identification, we try to avoid any possible chance of error creeping in.

Q. Do you avoid the category of "probable" identification?

A. Oh, yes; we never use it, never.

Q. And why is that?

A. There is no such thing as a probable identification, it either is or isn't as far as we are concerned.

Q. And in this case it is?

A. It is, yes.

In a discussion involving a different set of bullets (or commission exhibits) another witness presented the "gray" viewpoint when the issue was raised by counsel (19).

Q. . . . we had testimony . . . yesterday . . . that the . . . (laboratory) does not make probable identifications, but merely positive or negative identifications.

A. I am aware of their position. This is not, I am sure, arrived at without careful consideration. However, to say that because one does not find sufficient marks for identification that it is a negative, I think is going overboard in the other direction. And for purposes of probative value for whatever it might be worth, in the absence of very definite negative evidence, I think it is permissible to say that in an exhibit such as 573 there is enough on it to say that it could have come, and even perhaps a little stronger, to say that it probably came from this, without going so far as to say to the exclusion of all other guns. This I could not do.

Q. As I understand your testimony, therefore, you feel that there are sufficient identical microscopic characteristics on 572 and 573 to say that they were probably fired from the same weapon, but not enough to say that they were definitely fired from the same weapon.

A. Yes. My opinion would be based upon the finding of families of lines that would be of the order of two to four fine striations on the burr that I referred to. For a stronger identification, I would want a larger group, I would want perhaps five or six in a given area, all matching in terms of contour as well as position. But this I did not find. And so for that reason, I would not want to express this as a positive finding. However, I would not want to be misunderstood or suggest that this could not have come from that particular gun.

The literature supports the "gray" view taken by the last witness quoted. Indeed, an even more sophisticated statement (al-

though concerning tool marks rather than bullets) nevertheless expresses the most common view held by criminalists about evidence interpretation (20).

As a result of the microscopic or photographic comparisons made, four conclusions are possible:

1. No opinion or conclusion is reached due to alteration in the questioned mark or tool since the crime occurred.
2. The questioned tool did not make the evidence mark.
3. The questioned tool may have made the evidence mark, but a conclusive identification is not justified. Most cases involving tool marks where only class characteristics of the tool are present fall in this category. Occasionally, this conclusion may remain after microscopic comparison. The strength or value of this conclusion may vary greatly and depends upon the examiner's judgment of the probabilities involved.
4. The questioned tool did produce the evidence mark.

Research Requirements

Intimately connected with the question of interpretation is the problem of basic data, upon which objective criteria for the evaluation of physical evidence must be based. If the research work had been done and had been published, the problem would be relatively simple and such an evaluation possible. This indispensable, laborious work was started long ago and continues at a fantastic pace in the established sciences. In criminalistics however, where much of the pioneering effort was by nonscientists (as in ballistics or firearms identification, for example) there is a grave deficiency in published data. Indeed, it is almost nonexistent. Testimony reported in the hearings emphasizes unintentionally the scarcity of published data through failure to mention any journals in which such vital information is available. The subjective basis of firearms identification and the serious deficiency of data are clearly revealed in the following testimony:

Q. Finally, we had discussed briefly your examination of consecutively manufactured bolt faces to see whether any two such consecutively manufactured bolt faces were identical in their microscopic characteristics. How many such examinations have you performed?

A. I would say about four examinations of pairs of bolt faces which have been consecutively manufactured.

Q. And in each case the result was what?

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A. The marks on one bolt face in no way resembled the marks on the other bolt face (21).

Q. Have you examined consecutively manufactured barrels to determine whether their microscopic characteristics are identical?

A. Yes, sir; I have three different sets of, you might say, paired barrels, which have been manufactured on the same machine, one after the other, under controlled conditions to make them as nearly alike as possible, and in each case fired bullets from those barrels could not be identified with each other; in fact, they looked nothing at all alike as far as individual microscopic characteristics are concerned. Their rifling impressions of course would be identical, but the individual marks there would be entirely different (22).

This testimony is typical of the type of explanation offered by experts throughout the country in this area of criminalistics and accepted by courts at all levels. Therefore it is not here intended to question the findings or qualifications of the firearms expert testifying, but rather to emphasize that there is a deficiency of published information available for reference purposes. Already some outsiders who for the first time are looking into the merits of scientific crime detection, have commented with astonishment (relative to lie detection) on the lack of basic research and the need for acquisition of data (23). Unless measures are taken to correct this pervasive shortcoming in many areas of criminalistics, the day is not far off when the legal profession will become sufficiently sophisticated in science to make cross-examination a justifiably harrowing experience. Presently it is the scientific ignorance of lawyers only that permits much of the testimony of crime laboratory experts to go relatively unchallenged. These statements are not a criticism of particular individuals but of police administration in general which has not responded to the recommendations of many crime laboratory workers that this state of ignorance must be remedied through creation of opportunities for applied research. As the United States Supreme Court closes the door on traditional investigative practice, greater use is going to have to be made of physical evidence at crime scenes. Criminalistics, as an organized field of knowledge, still has homework to do before it can play its fullest role in this new era that has been thrust upon law enforcement.

SUMMARY AND CONCLUSIONS

1. The investigative procedure of the Warren Commission in some areas of criminalistics has been discussed in terms of stated objectives and the means employed to achieve them.

2. Examination of testimony, especially in instances illustrating dichotomy of interpretation, emphasizes the need for great expansion of applied research in criminalistic matters.

3. There is little doubt that the archival material now assembled in the form of records and reports of the agencies involved in President Kennedy's assassination provide the basis for further study into the question of investigative practice and theory.

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